

Listing of Claims

1. (Previously Presented) A transgenic plant comprising a plant transformation vector comprising a heterologous constitutive promoter operatively linked to a nucleotide sequence that encodes a DRO2 polypeptide comprising an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2 and including a Dof-type zinc finger domain, wherein the heterologous constitutive promoter provides overexpression of a DRO2 transcript such that said transgenic plant has increased drought tolerance as compared to a non-transgenic control plant.

2. (Canceled)

3. (Previously Presented) A method of producing increased drought tolerance in a plant, said method comprising:

a) introducing into plant cells a plant transformation vector comprising a heterologous constitutive promoter operatively linked to a nucleotide sequence that encodes a DRO2 polypeptide comprising an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2 to produce transformed cells;

b) growing the transformed cells to produce a transgenic plant, wherein said heterologous constitutive promoter provides overexpression of a DRO2 transcript, and

c) identifying said transgenic plant with increased drought tolerance by measuring relative water content of said transgenic plant.

4. (Canceled)

5. (Original) A plant obtained by a method of Claim 3.

6. (Previously Presented) A recombinant plant part obtained from the plant according to Claim 5.

7. (Previously Presented) A method of producing increased drought tolerance in a plant,

said method comprising:

a) introducing into plant cells a plant transformation vector comprising a nucleotide sequence that encodes a DRO2 polypeptide comprising the amino acid sequence of SEQ ID NO:2 to produce transformed cells, and

b) growing the transformed cells to produce a transgenic plant, wherein said nucleotide sequence is expressed, and said transgenic plant exhibits increased drought tolerance as compared to a non-transgenic control plant.

8. (Previously Presented) The method of Claim 7 wherein a DRO2 polypeptide is over-expressed in the transgenic plant as compared to a non-transgenic control plant.

9. (Canceled)

10. (Previously presented) The method of Claim 7 wherein the transformation vector comprises a constitutive promoter that controls expression of the DRO2 polypeptide.

11. – 15. (Canceled)

16. (Previously Presented) A transgenic plant comprising a heterologous nucleic acid construct comprising a T-DNA, an enhancer element, and a nucleotide sequence that encodes a DRO2 polypeptide comprising an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2 and including a Dof-type zinc finger domain, wherein the T-DNA inserts into a genome of the transgenic plant and the enhancer element provides upregulation of genes within about 10 kilobases of the T-DNA insertion resulting in the overexpression of a DRO2 transcript in the transgenic plant and increased drought tolerance and increased relative water content as compared to a non-transgenic control plant.

17. (New) The method of claim 3, wherein the nucleotide sequence that encodes the DRO2 polypeptide comprises the amino acid sequence of SEQ ID NO:2.

18. (New) The method of claim 3, further comprising subjecting the plant to water deprivation prior to identifying said transgenic plant with increased drought tolerance by measuring relative water content of said transgenic plant.

19. (New) The method of claim 18, wherein subjecting the plant to water deprivation comprises depriving the plant of water for at least 10 days.

20. (New) A method, comprising:
transforming a plant with a plant transformation vector comprising a heterologous constitutive promoter operatively linked to a nucleotide sequence that encodes a DRO2 polypeptide comprising an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2, wherein the heterologous constitutive promoter provides overexpression of a DRO2 transcript;

subjecting the plant to water deprivation;
measuring the relative water content of the plant, wherein an increase in relative water content of the plant as compared to a control plant which did not receive the transformation vector, indicates that the plant has increased drought tolerance, thereby identifying a method for producing a drought tolerant plant.

21. (New) The method of claim 20, wherein transforming a plant includes transforming a plant with defective endogenous DRO2 activity.

22. (New) The method of claim 20, wherein subjecting the plant to water deprivation comprises depriving the plant of water for at least 10 days.